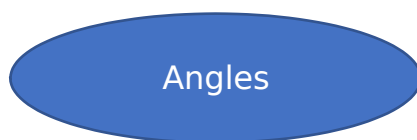


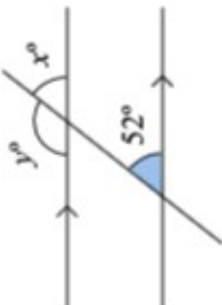
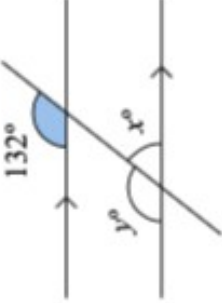
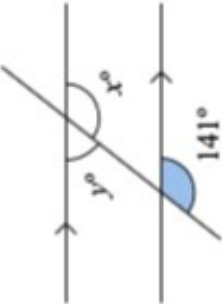
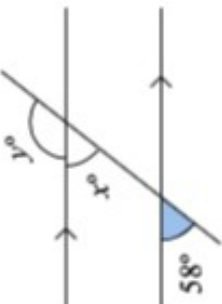
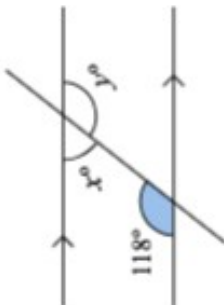
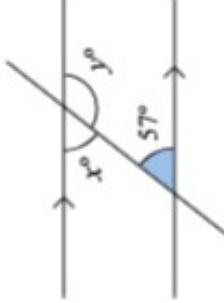
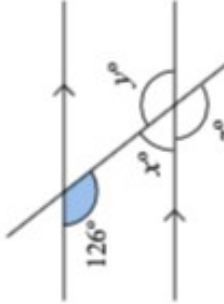
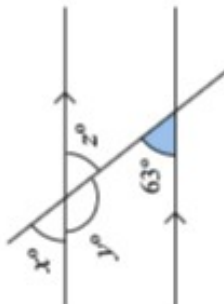
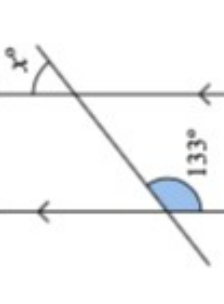
Angles on Parallel Lines (1) – Strengthening Skills

Do now – find the acute angle between the minute and hour hands



Task II – Spider diagram of all of your angles knowledge



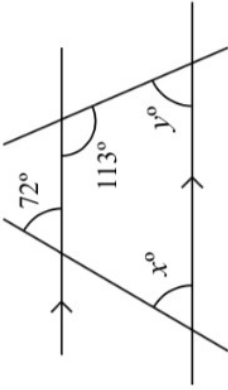
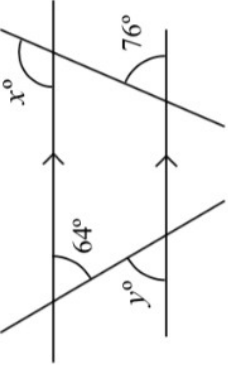
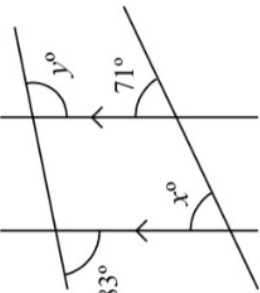
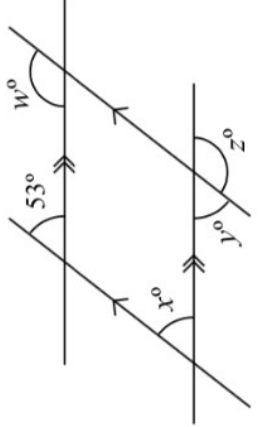
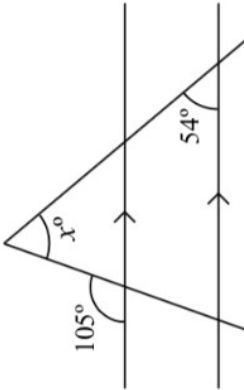
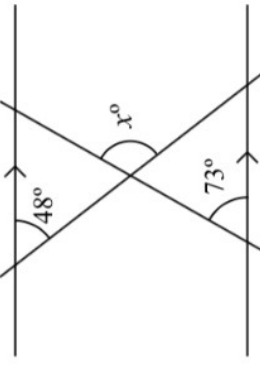
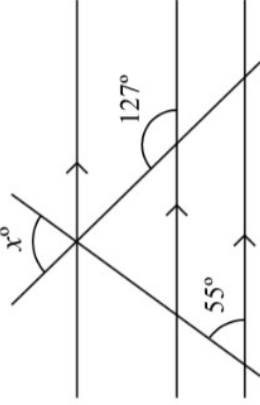
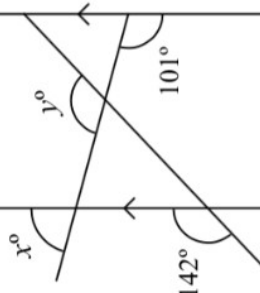
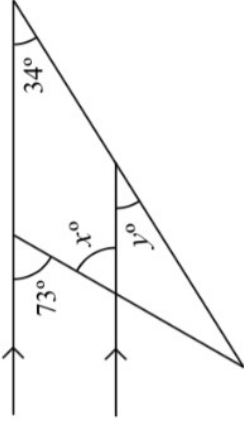
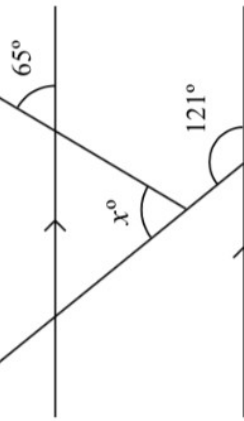
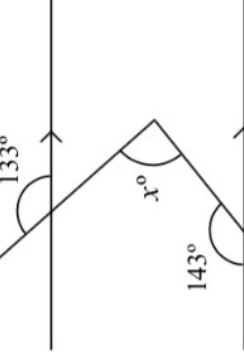
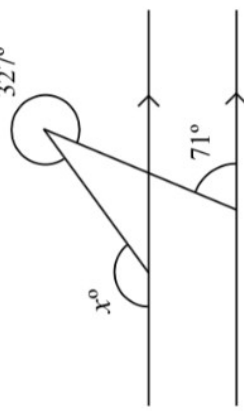
A1 Find the values of x and y 	A2 Find the values of x and y 	A3 Find the values of x and y 	A4 Find the values of x and y 
B1 Find the values of x and y 	B2 Find the values of x and y 	B3 Find the values of x , y and z 	B4 Find the values of x , y and z 
C1 Find the values of x and y 	C2 Find the values of x and y 	C3 Find the values of x , y and z 	C4 Find the value of x 

ANGLE

ANGLES WITHIN PARALLEL LINES

NO PROTRACTOR

Ref: G421. **3S1**

A1 Find the values of x and y 	A2 Find the values of x and y 	A3 Find the values of x and y 	A4 Find the values of x , y , w and z 
B1 Find the value of x 	B2 Find the value of x 	B3 Find the value of x 	B4 Find the values of x and y 
C1 Find the values of x and y 	C2 Find the value of x 	C3 Find the value of x 	C4 Find the value of x 

ANGLE ANGLES WITHIN PARALLEL LINES

NO PROTRACTOR

Ref: G421.
3E1

A1 Find the value of x	A2 Find the values of x and y	A3 Find the values of x and y	A4 Find the value of x
B1 Find the values of x and y	B2 Find the values of x and y	B3 Find the values of x and y	B4 Find the values of x and y
C1 Find the values of x and y	C2 Find the value of x	C3 Find the value of x	C4 Find the value of x

Shapes and Space (1d) Problem solving with angles on parallel lines

Exercise 1

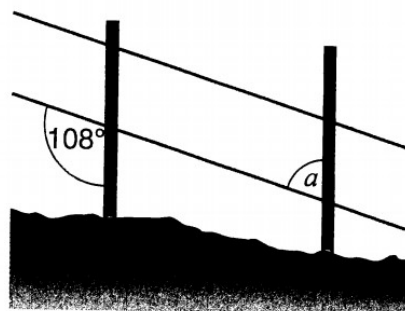
- ① This fence is going down a hill.

The posts are vertical.

The wires are parallel.

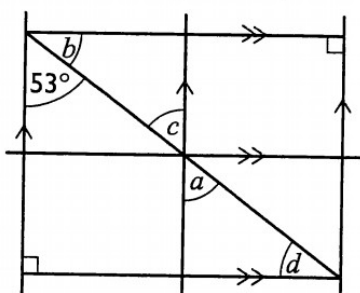
a What is angle a ?

b What angle do the wires make with the horizontal?

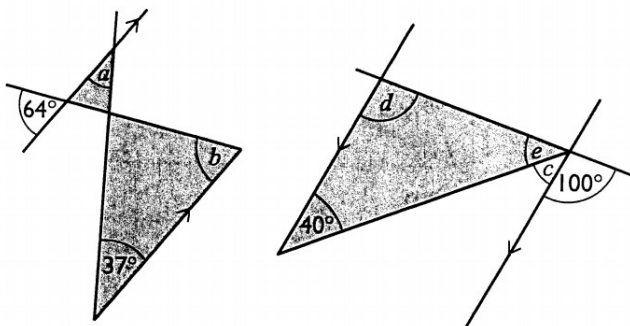


- ② The diagram shows part of a fence panel.

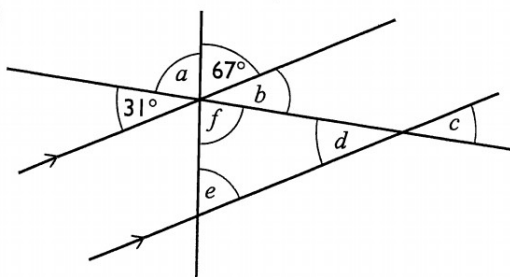
Find the angles a , b , c and d .



- ③ Write down the sizes of the lettered angles in these diagrams.
For each one give your reason.



④

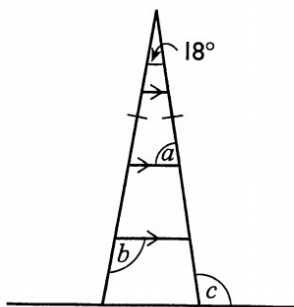


a Write down the size of each lettered angle.

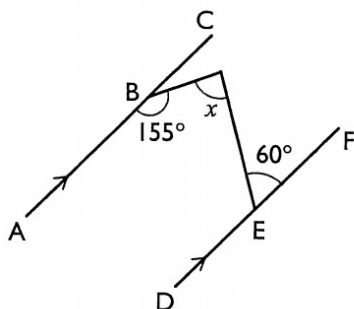
For each one give your reason.

b What is $f + d + e$?

- ⑤ This diagram represents an electricity pylon.
Find the sizes of the angles marked a , b and c . Give your reasons.

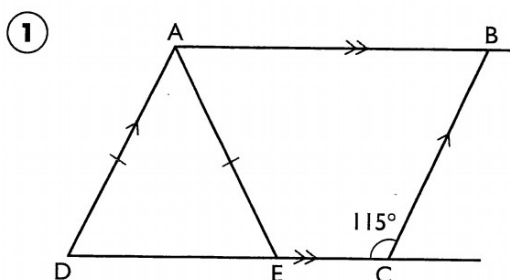


- ⑥ In the diagram, the straight lines ABC and DEF are parallel.



Find the size of angle x . Give your reasons.

Exercise 2

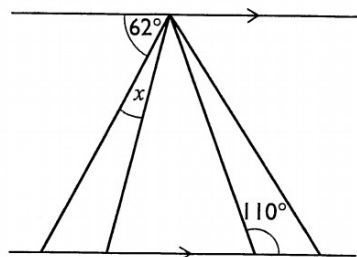


AB is parallel to DC. AD is parallel to BC.

E is a point on DC such that ADE is an isosceles triangle.

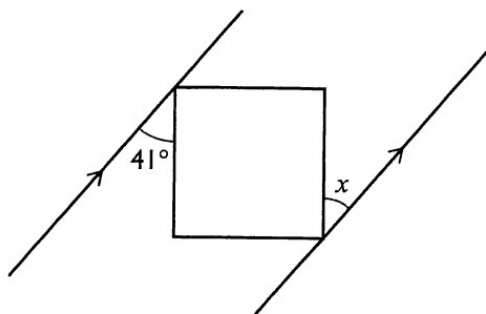
Find the size of angle DAE. Give your reasons.

- ② This diagram has a single line of symmetry and a pair of parallel lines.



Find the size of angle x . Give your reasons.

- 3 The diagram shows a square and a pair of parallel lines through two of its vertices.



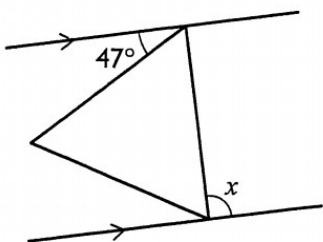
Jim thinks that $x = 41^\circ$.

Is Jim correct?

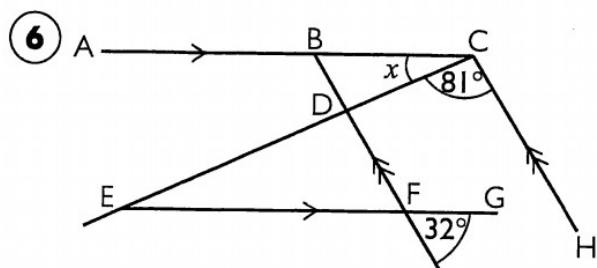
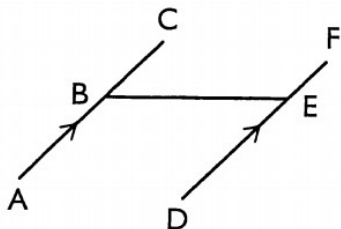
Give a reason for your answer.

- 4 The diagram shows an equilateral triangle and a pair of parallel lines, through two of its vertices.

Find the value of x . Give your reasons.



- 5 ABC and DEF are parallel lines.
Angle ABE is three times angle BED.
Work out the size of angle ABE.



ABC, EDC, BDF and EFG are straight lines.

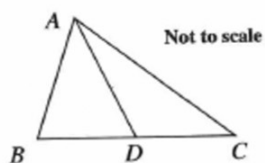
AC is parallel to EG.

BF is parallel to CH.

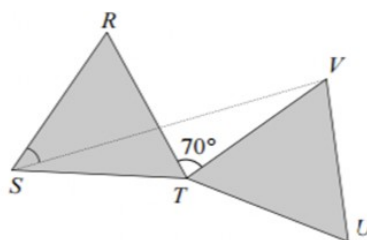
Find the value of x .

Extension

[IMC 2000 Q8] In the triangle ABC , $AD = BD = CD$. What is the size of angle BAC ?



[Kangaroo Pink 2013 Q9] The diagram shows an equilateral triangle RST and also the triangle TUV obtained by rotating triangle RST about the point T . Angle $RTV = 70^\circ$. What is angle RSV ?



[TMC Regional 2008 Q9] If $AB = BC = CD = DE = EF$ and angle $AEF = 75^\circ$, what is the size of angle EAF ?

Solution:

